



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

MAY 22 2013

CERTIFIED MAIL: 7012 1640 0001 2190 7557
RETURN RECEIPT REQUESTED

John Hill
Vice President and General Manager
Valero Refining Company - California
Benicia Refinery
3400 East 2nd Street
Benicia, California 94510-1097

RE: Information Request Pursuant to Section 114 of the Clean Air Act
Valero Benicia Refinery, Benicia, California

Dear Mr. Hill:

The United States Environmental Protection Agency, Region IX ("EPA") is issuing this information request to Valero Refining Company - California ("Valero" or "you") under the authority of Section 114, 42 U.S.C. § 7414, of the Clean Air Act (the "Act"), 42 U.S.C. §§ 7401 to 7671q. The purpose of this information request is to determine whether Valero's petroleum refinery in Benicia, California (the "Valero Benicia Refinery") has been and is in compliance with the applicable requirements of the Act. To this end, EPA hereby requires Valero to provide EPA the information and documents as requested in this information request, in accordance with the instructions and definitions included in Enclosure 1.

As part of its November 2010 inspection of the Valero Benicia Refinery, EPA issued information requests to Valero that included, among other things, information requests concerning the Valero Benicia Refinery flares (the "2010 Information Requests"). To the extent that Valero provided similar information in response to the 2010 Information Requests, such information should be amended or updated as necessary and resubmitted in accordance with this information request. If Valero believes that one or more of its responses to the 2010 Information Requests provides a complete response to a particular information request below, then Valero may choose to cite to its previous response(s) by cross-referencing to the request number(s) in the 2010 Information Requests. Copies of the 2010 Information Requests are included with this information request for your convenience.

All of the requests below seek information regarding all devices at the Valero Benicia Refinery meeting the definition of "Flare," including the "Acid Gas," "North," and "South" flares. If any Flares have been taken out of service or added into service during the time frames in the request below, provide the information for the time period the Flare was in service.

1. For each day beginning on January 1, 2006, up to and including January 31, 2013, list the periods of time (date, start time, and end time on a per Flare basis) that (i) Vent Gas (i.e., the mixture of Waste Gas, Purge Gas, and/or Supplemental Gas) was routed to each Flare ("Venting Periods"); (ii) gas other than Vent Gas was routed to each Flare ("Non-Venting Periods"); and (iii) no data

- on Flare flow was collected ("No Data Periods"). For each No Data Period, provide an explanation of why no data was collected.
2. On a per Flare basis, for each Venting Period listed in response to Paragraph 1 above, provide the hourly average concentration of each constituent in the Vent Gas vented to each Flare, with their respective molecular weights and Btu/scf values. If the constituents in the Vent Gas were not measured or calculated, use the best method(s) available to estimate or calculate the requested information on an hourly basis. Such methods of estimation or calculation would include, but would not be limited to, the use of calculations from an online, intermittent, or continuous gas chromatograph (whether at the Flare or upstream of the Flare); one-time or periodic samples or analyses of gas constituents flowing to the Flare (whether at the Flare or upstream of the Flare); or process knowledge. Provide a narrative explanation and example calculations describing how you arrived at your response.
 3. On a per Flare basis, for each Venting Period listed in response to Paragraph 1 above, provide the hourly average heating value (in Btu/scf) of the Vent Gas vented to each Flare. If the heating value was not measured or calculated, use the best means available to estimate or calculate the requested information on an hourly basis. Such methods of estimation or calculation would include, but would not be limited to, the use of calculations from an online, intermittent, or continuous gas chromatograph (whether at the Flare or upstream of the Flare); one-time or periodic samples or analyses of the Vent Gas flowing to the Flare (whether at the Flare or upstream of the Flare); or process knowledge. Provide a narrative explanation describing how you arrived at your response and, for any heating values that are estimated, provide all supporting calculations and data.
 4. On a per Flare basis, for each Venting Period listed in response to Paragraph 1 above, provide the average mass Vent Gas flow rate (in pounds per hour) and volumetric Vent Gas flow rate (in wet scfm) vented to each Flare. If the mass flow or volumetric flow rate was not measured or calculated, use the best means available to estimate or calculate the requested information. Such methods of estimation or calculation would include, but would not be limited to, estimating flow from pressure measurements. Provide a narrative explanation describing how you arrived at your response and, for any mass or volumetric flow rates that are estimated, provide all supporting calculations and data.
 5. On a per Flare basis, for each Venting Period listed in response to Paragraph 1 above, provide the hourly average rate at which steam and/or Assist Air was being added to each Flare (in pounds per hour for steam and scf/hour for Assist Air) at all locations on the Flare (i.e., the sum of seal, upper, lower, winterizing, etc.) during each Venting Period. If the steam or Assist Air flow was not measured, use the best means available to estimate it on an hourly basis. Such methods of estimation or calculation would include, but would not be limited to, estimating flow from pressure measurements or estimating steam flow from valve position data. Provide a narrative explanation describing how you arrived at your response and, for any steam or Assist Air flow rates that are estimated, provide all supporting calculations and data.

6. On a per Flare basis, for each Venting Period listed in response to Paragraph 1 above, provide the hourly average steam-to-Vent Gas or Assist Air-to-Vent Gas ratio (pound of steam/pound of Vent Gas or scf of Assist Air/pound of Vent Gas) for each Flare. Provide a narrative explanation describing how you arrived at your response and provide all supporting calculations and data.
7. For each Flare, provide the minimum steam or Assist Air addition rate (in pound/hour for steam and scf/hour for Assist Air) at all locations on the Flare (i.e., the sum of seal, upper, lower, winterizing, etc.). To the extent that the minimum steam or Air Assist addition rate changes on a seasonal basis, state the minimum rate for each season and the time periods during which each season's minimum rate applies.
8. Provide copies of any and all documents in your possession, custody, or control that prescribe or recommend the amount of steam or Assist Air to be added to each Flare. Identify in your narrative response the location in each document(s) that refers to (i) the maximum steam or Assist Air rate; (ii) the minimum steam or Assist Air rate; (iii) the steam or Assist Air addition rate associated with particular venting scenarios; (iv) any general steam-to-Vent Gas, steam-to-specific organic gas ratios, Assist Air-to-Vent Gas ratios, or Assist Air-to-specific organic gas ratios; or (vi) any other reference to steam or Assist Air addition.
9. For each Flare, provide copies of all manuals or operating instructions that were provided by the Flare manufacturer or vendor at any time. If no such documents are in your possession, state whether you never received any such documents or whether the documents were lost or discarded.
10. Describe in detail any research or studies conducted by Valero Benicia Refinery personnel or at the direction of Valero Benicia Refinery personnel regarding operation of Flares, including, but not limited to, research or studies into steam or Assist Air addition to Flares. Provide copies of any and all documents in your possession, custody, or control acquired or generated as the result of the research or studies that are the subject of this paragraph.
11. Describe in detail how each Flare operator is instructed on the level of steam, Assist Air, or Supplemental Gas to be added to the Flares.
12. On a per Flare basis, estimate the average number of minutes per hour that the Valero Benicia Refinery personnel in charge of operating each Flare spends on each of the following tasks: (i) visually monitoring the status of the Flare flame; (ii) monitoring the level of steam or Assist Air being sent to the Flare; (iii) monitoring the level of Supplemental Gas being sent to the Flare. If the requested information is not recorded, please estimate the requested values through interviews with your operators or by providing them with a questionnaire.
13. Estimate the percentage of time during the Venting Periods listed in response to Paragraph 1

above that there were orange or yellow flames above the Flare tip and the percentage of time that there was no visible flame.

14. For each Flare, state with specificity which, if any, federal, state, or local air pollution rules or regulations apply to the Flare. If any Flare is listed in a permit issued under federal, state, or local air pollution rules or regulations, provide an electronic copy, preferably in "PDF", of each currently effective permit.
15. For each Flare, state whether the Flare is configured to receive gases/vapors from one or more pressure relief devices, which are safety devices used to prevent operating pressures from exceeding the maximum allowable working pressure of the process equipment.
16. For each Flare, state whether the Flare and its associated closed vent system is used as the method of compliance with any federal regulation, including without limitation, the Standards of Performance for New Stationary Sources found at 40 C.F.R. Part 60, the National Emission Standards for Hazardous Air Pollutants found at 40 C.F.R. Part 61, and the National Emission Standards for Hazardous Air Pollutants for Source Categories found at 40 C.F.R. Part 63, (specifically including without limitation any leak detection and repair provisions promulgated under these Parts such as 40 C.F.R. § 60.482-4(c) or 40 C.F.R. § 63.165(c)). In each such case, identify the process unit or equipment that is/are the "affected facility" under the applicable Part and the specific Subpart that applies to the "affected facility."
17. Provide a list of each instance where new piping or larger piping was physically connected to a Flare header since June 24, 2008. The list must identify the following:
 - a. The header and the Flare that are fed by the header;
 - b. The maximum and average flows of gas added to the header in scfm;
 - c. Whether the gas supplied by the new or larger piping contains any sulfur and the expected average and maximum H₂S, COS, and CS₂ concentrations in the gas; and
 - d. The date that the new or larger piping was physically connected to the flare header.

Valero shall submit its responses to this information request postmarked no later than **June 28, 2013**. Please submit your responses to this information request via certified mail with return receipt requested to the following address:

Ms. Kathleen H. Johnson
Director, Enforcement Division
U.S. Environmental Protection Agency, Region IX
75 Hawthorne Street
San Francisco, California 94105
ATTN: Joseph Lapka (ENF-2-1)

The responses to this information request must be certified by a responsible corporate official of

John Hill
Valero Refining Company – California
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Valero (i.e., a president, secretary, treasurer, or vice-president of Valero; a senior management representative at the Valero Benicia Refinery; or any person who performs similar policy or decision-making functions for Valero) with the following certification:

I certify under penalty of law that I have examined and am familiar with the information in the enclosed documents, including all attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are, to the best of my knowledge and belief, true and complete. I am aware that there are significant penalties for knowingly submitting false statements and information, including the possibility of fines or imprisonment pursuant to Section 113(c)(2) of the Act, and 18 U.S.C. §§ 1001 and 1341.

Please be advised that under Section 113(a) of the Act, failure to provide the information and documents required by this letter may result in an order requiring compliance, an order assessing an administrative penalty, or a civil action for appropriate relief. Section 113(b) of the Act and 40 C.F.R. Part 19 provide for the assessment of a civil penalty of \$37,500 per day for each violation of the Act. In addition, Section 113(c) of the Act provides criminal penalties for knowingly making any false statement or omission in any response required under the Act. EPA may also seek criminal penalties from any person who knowingly alters, destroys, mutilates, conceals, covers up, falsifies, or makes a false entry in any record, document, or tangible object with the intent to impede, obstruct, or influence the investigation or proper administration of any matter within the jurisdiction of EPA or in relation to or contemplation of any such matter or case. See 18 U.S.C. § 1519.

The information provided by you may be used by the United States in administrative, civil, or criminal proceedings.

The information requested must be submitted whether or not you regard part or all of it confidential business information. You may, if you desire, assert a confidentiality claim covering part of, or all of, the information requested, pursuant to 40 C.F.R. § 2.203(b), by attaching to such information a cover sheet, stamped, or typed legend, or other suitable form of notice employing language such as "trade secret" or "proprietary" or "company confidential." Information covered by such a claim will be disclosed by EPA only to the extent allowed by, and only by means of the procedures set forth in, the regulations at 40 C.F.R. Part 2, Subpart B. If no such claim accompanies the information when it is received by EPA, it may be made available to the public by EPA without further notice to you. In any event, you should read the above-cited regulations carefully before asserting a business confidentiality claim, since certain categories of information are not properly the subject of such a claim (e.g., emissions data).

Pursuant to 40 C.F.R. § 2.301(h)(2)(iii), you are further advised that to assist in its review and analysis of the submitted information, EPA intends to share this information with an EPA contractor. Pursuant to 40 C.F.R. § 2.301(h), EPA possesses the authority to disclose information otherwise

John Hill
Valero Refining Company – California
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entitled to confidential treatment to any authorized representative of the United States approved to receive and review information subject to a business confidentiality claim. Pursuant to 40 C.F.R. § 2.301(h)(2)(iii), EPA is notifying you that EPA intends to disclose information, including information from your responses to the 2010 Information Requests that you cross-reference as part of this information request or information for which you may assert a business confidentiality claim, to the Eastern Research Group, Inc., under contract number EP-W-11-004, to provide EPA with technical review, analysis, and evaluation support. You may submit comments to EPA with your response to this information request or within five (5) working days of your response. Please submit your comments to the EPA Assistant Regional Counsel mentioned below.

The requirements of this letter are not subject to the Paperwork Reduction Act, 44 U.S.C. § 3501 *et seq.*

If you have any questions regarding this information request, please contact Joseph Lapka of my staff at (415) 947-4226, or have your attorney contact Thomas P. Mintz of our Office of Regional Counsel at (415) 972-3896.

Sincerely,



Kathleen H. Johnson
Director, Enforcement Division

Enclosures: Instructions and Definitions
Copies of 2010 Information Requests

cc: Jack Broadbent, BAAQMD

ENCLOSURE 1

INSTRUCTIONS

1. For each document produced in response to this information request, indicate on the document, or in some other reasonable manner, the number of the request to which it responds. To the extent that a document is responsive to more than one request, this must be so indicated and only one copy of the document need be provided.
2. To the extent that Valero has no responsive information or documents for any particular request, this must be explicitly stated in the response.
3. If possible, please provide all documents electronically, with text documents in searchable "PDF" format and data tables in Microsoft Excel format. No hard copy is necessary.

DEFINITIONS

All terms used in this information request will have their ordinary meaning unless such terms are defined in the Act or the Act's implementing regulations. The following definitions shall apply to the following terms as they appear in this information request:

1. "Ambient air" or "air" shall mean that portion of the atmosphere, external to buildings, to which persons have access.
2. "Assist Air" shall mean all air that intentionally is introduced into an air-assisted Flare to assist in combustion.
3. "Document" and "documents" shall mean any object that records, stores, or presents information, and includes writings, memoranda, records, or information of any kind, formal or informal, whether wholly or partially handwritten or typed, whether in computer format, memory, or storage device, or in hardcopy, including any form or format of these. If in computer format or memory, each such document shall be provided in translation to a form useable and readable by EPA, with all necessary documentation and support. All documents in hard copy should also include attachments to or enclosures with any document.
4. "Flare" shall mean a combustion device that uses an uncontrolled volume of Ambient Air to burn gases. A Flare may be equipped with a radiant heat shield (with or without a refractory lining), but is not equipped with a flame air control damping system to control the air/fuel mixture. A Flare may use auxiliary fuel. The combustion flame may be elevated or at ground level.
5. "Pilot Gas" shall mean gas introduced through the pilot tip of a Flare to maintain a flame.

6. "Purge Gas" shall mean the minimum amount of gas introduced between a Flare header's water seal and the Flare tip to prevent oxygen infiltration (backflow) into the Flare tip. For a Flare with no water seal, the function of Purge Gas is performed by Sweep Gas.
7. "Supplemental Gas" shall mean all gas introduced to a Flare to raise the heating value of Waste Gas.
8. "Sweep Gas" shall mean the minimum amount of gas introduced into a Flare header in order to: (i) prevent oxygen buildup, corrosion, or freezing in the Flare header; and (ii) maintain a safe flow of gas through the Flare header, including a higher flow during hot taps; and (iii) for a Flare without a water seal, prevent oxygen infiltration (backflow) into the Flare tip.
9. "Vent Gas" shall mean the mixture of all gases found just prior to the Flare tip. This gas includes all Waste Gas, Sweep Gas, Purge Gas, and Supplemental Gas, but does not include Pilot Gas, steam, or Assist Air.
10. "Waste Gas" shall mean the mixture of all gases from facility operations that is directed to a Flare for the purpose of disposing of the gas. "Waste Gas" does not include Sweep Gas, Purge Gas, Supplemental Gas, Pilot Gas, steam, or Assist Air.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street
San Francisco, CA 94105-3901

NOV 05 2010

CERTIFIED MAIL NO. 7000 0520 0021 6106 8040
RETURN RECEIPT REQUESTED

Douglas W. Comeau
Vice President and General Manager
Valero Refining Company - California
Benicia Refinery
3400 East 2nd Street
Benicia, California 94510-1097

Re: Notice of Clean Air Act Inspection and Section 114 Request for Information
Valero Benicia Refinery, Benicia, California

Dear Mr. Comeau:

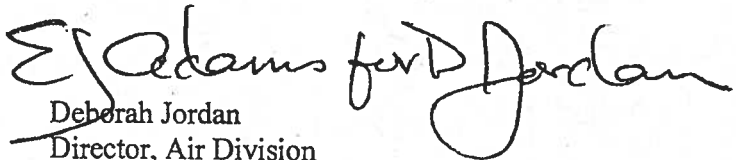
The U.S. Environmental Protection Agency (EPA) will conduct a comprehensive Clean Air Act inspection of the Valero Refining Company – California (Valero) refinery in Benicia, California, commencing on November 15, 2010, to determine compliance with the Clean Air Act, its implementing regulations, approvals, and permits. The inspection is authorized pursuant to EPA regulations and Section 114 of the Clean Air Act, 42 U.S.C. § 7414. During the inspection, EPA will inspect equipment, take photographs and video, request and review documents, and interview refinery personnel.

In order to facilitate the inspection, we have prepared an initial list of documents (*see* Enclosure) required to be made available for review by the EPA inspectors during the inspection. During the inspection, EPA may request other documents, not on this list, as the need arises. We believe that the records listed in the Enclosure are, or should be, readily available at your facility. However, if additional time is necessary to complete a request, please discuss a schedule for completion and submission of the documents with the inspectors at the time of the inspection.

You may, if you desire, assert a confidentiality claim covering part of, or all of, the information requested, pursuant to 40 C.F.R. § 2.203(b), by attaching to such information, at the time of inspection, a cover sheet, stamped, or typed legend, or other suitable form of notice employing language such as "trade secret" or "proprietary" or "company confidential." Information covered by such a claim will be disclosed by EPA only to the extent allowed by, and only by means of the procedures set forth in, the regulations at 40 C.F.R. Part 2, Subpart B. If no such claim accompanies the information when it is received by EPA, it may be made available to the public by EPA without further notice to you. In any event, you should read the above-cited regulations carefully before asserting a business confidentiality claim, since certain categories of information are not properly the subject of such a claim. EPA may request at a later time that further documents be sent pursuant to the authority of Section 114 of the Clean Air Act.

Please contact Patrick W. Foley at (202) 564-7978, or Margaret Waldon at (415) 972-3987, soon as is convenient to arrange a conference call to discuss the inspection plan and this request for information. We thank you in advance for your cooperation.

Sincerely,


Deborah Jordan
Director, Air Division

Enclosure

cc: Jack Broadbent, BAAQMD
Kelly Wee, BAAQMD
Todd Lopez, Valero

Enclosure

EPA is requesting that the following documents be made available for review during the inspection scheduled to begin on November 15, 2010.

1. Block process flow diagrams for the refinery as a whole and each process unit at the refinery, including units under construction or planned for construction, and a detailed plot plan of the refinery.
2. A list of each continuous emissions monitoring systems (CEMS) installed at the refinery that describes the model type, the emissions unit, and the pollutant monitored, with a copy of the sections of the CEMS manual that describes the principle of operation and the recommended quality assurance/quality control procedures.
3. Copies of Title V permit annual or semi-annual compliance certifications that Valero submitted to a local agency, State, or EPA since June 16, 2005.
4. A list and copies of all engineering or feasibility studies of actual or possible changes to each fluid catalytic cracking unit (FCCU) and to each fluid coking unit from January 1, 1980, to the present whether such changes were implemented or not.
5. A list and copies of all engineering or feasibility studies of actual or possible changes for all other process units at the refinery from January 1, 2003, to the present whether such changes were implemented or not.
6. A list and copies of all air permits or orders (including but not limited to permits to construct or permits to operate) issued since June 16, 2005. In the list:
 - a. Specify the date of permit or order issuance;
 - b. Provide a list of equipment that was modified or constructed pursuant to the permit or order;
 - c. State whether the permit or order is minor new source review (minor NSR), prevention of significant deterioration (PSD), major non-attainment new source review (major NNSR), or other type of permit or order; and
 - d. If a permit is a PSD or major NNSR permit or order, specify the pollutants for which such permit or order was issued.
7. A list and copies of all of the following documents submitted to a local agency, State, or EPA since June 16, 2005:
 - a. all air permit or order applications; and
 - b. all correspondence related to such permit or order applications, including all supporting documentation.

8. A list and copies of all air permits or orders; air permit or order applications submitted to a local agency, State, or EPA; and correspondence related to such permit or order applications (including all supporting documentation) submitted to a local agency, State, or EPA, for any FCCU or fluid coking unit at the refinery since January 1, 1980.
9. Provide a list of all documents that estimate the air pollutant emissions changes for any project undertaken at the refinery since June 16, 2005.
10. A list of all authorizations for expenditure (AFE), capital appropriation requests (CARs), or any other such documents that authorize expenditures from January 1, 2003, to the present. Please provide this list in electronic format and include at least the following details:
 - a. The internal number used to identify the AFE or CAR;
 - b. The date that the AFE or CAR was submitted;
 - c. Cost of the project proposed by the AFE or CAR; and
 - d. A brief description of the project proposed by the AFE or CAR.
11. Copies of all AFEs, CARs, or any other such document that authorized expenditures on any heater, boiler, fuel gas system, sulfur recovery unit, flare, flare header, or flare gas recovery system since January 1, 2003.
12. A list and copies of all AFEs, CARs, or any other such documents that authorize expenditures on any FCCU or fluid coking unit from January 1, 1980, to the present. Please provide the list in electronic format and include at least the following details:
 - a. The internal number used to identify the AFE or CAR;
 - b. The date that the AFE or CAR was submitted;
 - c. Cost of the project proposed by the AFE or CAR; and
 - d. A brief description of the project proposed by the AFE or CAR.
13. Copies of all turn-around reports for each FCCU and each fluid coking unit from January 1, 1980, to the present.
14. Monthly average data from January 1980 to June 15, 2005, and daily average data from June 16, 2005, to the present (both in an Excel formatted electronic file) for each fluid coking unit at the refinery for each of the following parameters:
 - a. Fluid coker feed rate, in barrels per day (bpd);
 - b. Fluid coker feed composition (source of feed stream and breakdown by type of petroleum derivative, in bpd);
 - c. Fluid coker feed sulfur content (ppmw);
 - d. Fluid coker feed total nitrogen content (ppmw);

- e. Fluid coker feed API gravity;
 - f. Fluid coker coke production, in tons per day;
 - g. Fluid coker combustion air flow rate (scfm);
 - h. Oxygen injection rate, in tons per day;
 - i. Stack gas flow rate (dscfm);
 - j. CO concentration in the stack gas in ppmvd at 0 percent O₂;
 - k. NO_x concentration in the stack gas in ppmvd at 0 percent O₂;
 - l. SO₂ concentration in the stack gas in ppmvd at 0 percent O₂; and
 - m. Oxygen concentration in the stack gas in volume percent, dry.
15. Monthly average data from January 1980 to June 15, 2005, and daily average data from June 16, 2005, to the present (both in an Excel formatted electronic file) for each FCCU at the refinery for each of the following parameters:
- a. FCCU feed rate (bpd);
 - b. FCCU feed composition (source of feed stream and breakdown by type of petroleum derivative, in bpd);
 - c. Percentage of FCCU feed hydrotreated (volume percent);
 - d. FCCU recycle rate (bpd);
 - e. FCCU feed preheat temperature (degrees F);
 - f. FCCU feed sulfur content (ppmw);
 - g. FCCU feed total nitrogen content (ppmw);
 - h. FCCU feed basic nitrogen content (ppmw);
 - i. FCCU feed API gravity;
 - j. FCCU catalyst circulation rate (lbs/hr);
 - k. FCCU catalyst to oil ratio;
 - l. Reactor stripping steam (lbs/hr);
 - m. FCCU combustion air flow rate (scfm);
 - n. Oxygen injection rate (tons/day);
 - o. Regenerator coke burn rate (lbs/hr);
 - p. FCCU catalyst addition rate (tons/day);
 - q. Regenerator bed level (inches H₂O);
 - r. Equilibrium catalyst carbon (weight percent of catalyst);
 - s. Equilibrium catalyst activity (MAT);
 - t. Average regenerator dense bed temperature (degrees F);
 - u. Average regenerator dilute phase temperature (degrees F);
 - v. Average regenerator cyclone temperature (degrees F);
 - w. Average reactor temperature (degrees F);
 - x. Firebox temperature of each CO boiler or Fired Waste Heat Boiler (degrees F);
 - y. Auxiliary fuel type, higher (gross) heating value of the fuel gas (Btu/scf), fuel density (lbs/dscf) or specific gravity, sulfur content (percent by weight, as H₂S) and firing rate(s) for each CO boiler or Fired Waste Heat Boiler;
 - z. Regenerator flue gas CO/CO₂ molar ratio, oxygen concentration (volume percent, dry), flow rate (scfm), and temperature (degrees F);

- aa. Regenerator flue gas SO₂ concentration (ppmvd at 0 percent O₂ or other identified reference O₂);
 - bb. Regenerator flue gas TRS concentration (ppmvd at 0 percent O₂ or other identified reference O₂);
 - cc. CO concentration in the stack gas in ppmvd at 0 percent O₂;
 - dd. NO_x concentration in the stack gas in ppmvd at 0 percent O₂;
 - ee. SO₂ concentration in the stack gas in ppmvd at 0 percent O₂;
 - ff. Oxygen concentration in the stack gas in volume percent, dry;
 - gg. Stack gas flow rate (dscfm);
 - hh. CO promoter catalyst additive type and addition rates (lbs/day);
 - ii. NO_x reducing catalyst additive type and addition rates (lbs/day); and
 - jj. SO_x reducing catalyst additive type and addition rates (lbs/day).
16. A list and copies of all documents that Valero prepared or submitted to a local agency, State, or EPA to demonstrate compliance with 40 C.F.R. Part 63, Subparts CC or UUU.
17. A diagram of each fuel gas system at the refinery that shows:
- a. The origin of each process or waste stream contributing to the fuel gas system;
 - b. All points of collection and mixing of fuel gas;
 - c. The location of all analyzers measuring sulfur content whether installed as CEMS or for process purposes;
 - d. The location of all fuel gas treatment processes (including amine treatment and other methods);
 - e. The location of all devices, including but not limited to boilers, process heaters, and flares in which fuel gas is or can be combusted; and
 - f. The location of all flare gas recovery compressors.
18. A list of all refinery fuel gas streams that are subject to the 40 C.F.R. Part 60, Subpart J hydrogen sulfide (H₂S) standard, but are not continuously monitored for H₂S concentration using a CEMS. Valero shall explain how these streams are monitored to demonstrate compliance with the H₂S standard.
19. A piping and instrumentation diagram of each flare system that shows the locations of each pressure or flow measurement, knockout drum, and water seal. In addition, for each flare, provide a list of all gas streams that are routed to the flare on a continuous or intermittent basis. In this list, include at least the actual volume of each stream that is burned in the flare and the sulfur content of each stream.
20. Copies of all performance tests that Valero conducted for each flare at the refinery. For each such test, state whether the test was conducted to comply with a federal, State, or local testing requirements and provide a reference to such testing requirement.

21. Daily average data (in an Excel formatted electronic file) for the flow of gas to each flare in scfm from June 16, 2005, to the present. Describe how such flow was measured or calculated.
22. Daily average data (in an Excel formatted electronic file) for the net heating value (Btu/scf) of gas to each flare from June 16, 2005, to the present. Describe how the net heating value was measured or calculated.
23. Daily average data (in an Excel formatted electronic file) for the average molecular weight of gas to each flare from June 16, 2005, to the present. Describe how the average molecular weight was measured or calculated.
24. Copies of all Refinery Flaring Reports and Flare Pilot Light Outrage Reports that Valero submitted to a local agency, State, or EPA since June 16, 2005.
25. Copies of all Standard Operating Procedures, flare operating manual, and any other documents that prescribe or recommend the amount of steam that flows to each flare during a flaring event.
26. Daily average data (in an Excel formatted electronic file) for the mass flow rate of steam (lb/hr) to each flare since June 16, 2005. Provide a narrative description of how the flow rates were derived.
27. Design specifications, vendor specifications, and calculations or other information that characterizes flow, thermal or mass limitations, or other properties that define the capacity of each flare.
28. A description of the operational monitoring for each flare. State whether the steam, purge gas, auxiliary fuel, and vent gas are measured, and how they are controlled.
29. A list of all flaring events in excess of 500 pounds of SO₂ since June 16, 2005, that includes:
 - a. the time, date, and duration of each flaring event;
 - b. whether the flaring event occurred during startup, shutdown, or malfunction (if applicable, include a brief description of the startup, shutdown, or malfunction);
 - c. whether the flaring event is due to process upset gases or fuel gas released to the flare as a result of relief valve leakage or other emergency malfunction (if applicable, include a description of the emergency malfunction);
 - d. the quantity of SO₂ emissions released into the atmosphere during the flaring event;
 - e. for each fuel gas stream routed and combusted at the flare during the flaring event, the quantity of fuel gas and concentration of H₂S in the gas stream;

- f. the compliance status with the requirements in 40 C.F.R §§ 60.18 and 63.11 during the event (explain how the compliance was determined);
 - g. if possible, the root cause of each flaring event and any corrective actions taken post the flaring event;
 - h. the mass flow rate of steam (lbs/hr) to the flare; and
 - i. for steam or air assisted flares, the ratio of steam or air to organic mass flow rate (lbs of steam or air/lbs of organic mass).
- 30. Copies of all audits to determine 40 C.F.R. Part 60, Subparts J or Ja applicability to flares at the refinery conducted by the company or by an outside party since April 30, 2007.
- 31. Copies of all documents that Valero prepared or submitted to local agency, State, or EPA to demonstrate compliance with the requirements in 40 C.F.R. §§ 60.18 and 63.11 for all flares at the refinery since the flare(s) became subject to any 40 C.F.R. Parts 60 or 63 requirements.
- 32. Copies of all flare capacity studies conducted at the refinery for any reason since June 16, 2005.
- 33. Copies of all flare gas recovery system capacity studies conducted at the refinery for any reason; all flare gas recovery system operating manuals submitted to a local agency, State or EPA; and all flare gas recovery system manufacturer's operating manuals.
- 34. Provide a list of each instance where a new line or larger line was tied in to a flare gas header since April 30, 2007, that includes the following:
 - a. Identify the header and the flares that are fed by the header;
 - b. State the maximum and average flows of gas added to the header in scfm;
 - c. State whether the gas supplied by the new or larger line contains any sulfur and provide the expected average and maximum H₂S, COS and CS₂ concentrations in the gas; and
 - d. State the date that the new or larger line was tied in to the flare.
- 35. A list and copies of all tests conducted for any reason measuring emissions of air pollutants to the atmosphere at the refinery since June 16, 2005. This list should include at least the following details:
 - a. The emitting unit tested;
 - b. The date the test was conducted;
 - c. The pollutant(s) tested; and
 - d. The test methods used.

36. Copies of all tests that measure emissions to the atmosphere of any pollutant conducted for any reason from any step of catalytic reforming unit regeneration conducted since 1980.
37. Copies of all Quarterly or Semi-annual Excess Emissions Reports that Valero submitted to a local agency, State, or EPA under 40 C.F.R. Part 60, Subparts A, J, Ja, VV, GGG, or QQQ since June 16, 2005.
38. For 40 C.F.R. Part 60, Subpart J, a list that identifies separately for each pollutant and emissions unit monitored, for each Quarterly or Semi-Annual Excess Emissions Report:
 - a. The reporting period;
 - b. The total duration of excess emissions; and
 - c. The total CEMS downtime.
39. Provide copies of the last five annual emission inventories submitted to a local agency, State, or EPA and all documents that are or were used to prepare the refinery's annual emissions inventory. Provide a detailed description of how the annual emissions inventory is prepared.

40. Provide set point for steam-to-vent gas for flares on a lb/lb basis, and provide any supporting documentation available.
41. Provide the manufacturer's recommended minimum steam rate for each flare.
42. Provide the latest status update on the elements of the Valero Improvement Project, including dates of completion of construction and startup.
43. Provide a list of tanks that includes tank identification number, contents, temperature, and controls (e.g., fixed roof with vent to atmosphere, fixed roof with a closed vent system, internal floating roof, external floating roof, and any other controls).
44. Provide daily average data (in an Excel formatted file) for the hydrogen and hydrogen sulfide content of gas to each flare from June 16, 2005, to the present. Describe how the data were measured or calculated.
45. Provide any test data on high pressure fuel gas (in particular hydrogen sulfide content).
46. Provide copies of all studies for the FCCU and Fluid Coker (a list was provided in response to letter request #4).
47. Provide a list of compounds measured in samples of gas to each flare.
48. Provide responses to 34b., c., and d. for the new lines or larger lines identified in response to 34a.
49. Provide copies of all BAAQMD Rule 12 reports for flaring events submitted since June 16, 2005..
50. Provide daily average data (in an Excel formatted file) for each compound measured in samples of gas to each flare from June 16, 2005, to the present. Describe how the data were measured or calculated.
51. Provide hourly average ground level monitor data (in an Excel formatted file) for all ground level monitors for H₂S for April 2009 and May 2010.
52. Provide hourly average data (in an Excel formatted file) for flare flow rate to each flare and recovered gas flow rate from June 16, 2005, to the present. Describe how the data were measured or calculated.

53. Identify all periods when the sulfur pit vent to the atmosphere has been opened from June 16, 2005, to the present.
54. Provide the four control board print-outs generated during the EPA inspection on November 18, 2010, of the North and South Flares and both Pipe Still Furnaces.